

IN THE CLAIMS

A clean copy of the claims incorporating any amendment is shown below.

Please amend Claims 1 and 2, and add new Claims 5-12 as follows:

1. (Amended) A process for separating mixtures of hydrocarbon isomers in gas phase on molecular sieves, comprising the steps of:

providing a plurality of columns each including molecular sieves and configured to function alternately such that the columns are designated to function from a secondary adsorption device, to a primary adsorption device, and to a desorption device in sequence;

feeding the mixtures of hydrocarbon isomers to at least one of the columns functioning as the primary adsorption device such that isomers with a greater selectivity towards the molecular sieves in the mixtures of hydrocarbon isomers are adsorbed;

feeding an effluent of the mixtures of hydrocarbon isomers from the at least one of the columns functioning as the primary adsorption device to at least one of the columns functioning as the secondary adsorption device such that remaining of the isomers with a greater selectivity towards the molecular sieves are adsorbed;

discharging isomers with a lower selectivity towards the molecular sieves in the mixtures of hydrocarbon isomers from the at least one of the columns functioning as the secondary adsorption device and a desorbing agent remaining therein;

feeding a desorbing agent to at least one of the columns functioning as the desorption device;

discharging isomers with a greater selectivity towards the molecular sieves in the mixtures of hydrocarbon isomers and the desorbing agent in the at least one of the columns functioning as the desorption device;

feeding the isomers with a lower selectivity towards the molecular sieves and the

112

8

112

desorbing agent discharged from the at least one column functioning as the secondary adsorption device to a first distillation unit configured to recover the desorbing agent for recycling for the at least one column functioning as the desorption device; and

feeding ⁽¹¹²⁾the isomers with a greater selectivity towards the molecular sieves and the desorbing agent discharged from the at least one of the columns functioning as the desorption device to a second distillation unit configured to recover the desorbing agent for recycling for the at least one of the columns functioning as the desorption device.

2. (Amended) The process according to claim 1, wherein the columns are configured to carry out at a temperature ranging from 20 to 180°C and at a pressure ranging from 1 to 10 bars when functioning as the primary and secondary adsorption devices.

5. (New) The process according to claim 1, wherein the columns comprises at least three columns.

6. (New) A process for separating mixtures of hydrocarbon isomers in gas phase on molecular sieves, comprising the steps of:

providing a plurality of columns each including molecular sieves and configured to function alternately such that the columns are designated to function from a secondary adsorption device, to a primary adsorption device, and to a desorption device in sequence;

feeding the mixtures of hydrocarbon isomers to at least one of the columns functioning as the primary adsorption device such that isomers with a greater selectivity towards the molecular sieves in the mixtures of hydrocarbon isomers are adsorbed;

feeding an effluent of the mixtures of hydrocarbon isomers from the at least one of the columns functioning as the primary adsorption device to at least one of the columns functioning as the secondary adsorption device such that remaining of the isomers with a greater selectivity towards the molecular sieves are adsorbed;

discharging isomers with a lower selectivity towards the molecular sieves in the mixtures of hydrocarbon isomers from the at least one of the columns functioning as the secondary adsorption device and a desorbing agent remaining therein;

feeding a desorbing agent to at least one of the columns functioning as the desorption device; and

discharging isomers with a greater selectivity towards the molecular sieves in the mixtures of hydrocarbon isomers and the desorbing agent in the at least one of the columns functioning as the desorption device.

7. (New) The process according to claim 6, further comprising feeding the isomers with a lower selectivity towards the molecular sieves and the desorbing agent discharged from the at least one column functioning as the secondary adsorption device to a first distillation unit configured to recover the desorbing agent for recycling for the at least one column functioning as the desorption device

8. (New) The process according to claim 6, further comprising feeding the isomers with a greater selectivity towards the molecular sieves and the desorbing agent discharged from the at least one of the columns functioning as the desorption device to a second distillation unit configured to recover the desorbing agent for recycling for the at least one of the columns functioning as the desorption device.

9. (New) The process according to claim 6, wherein the columns are configured to carry out at a temperature ranging from 20 to 180°C and at a pressure ranging from 1 to 10 bars when functioning as the primary and secondary adsorption devices.

10. (New) The process according to claim 6, wherein the desorbing agent is an aliphatic hydrocarbon in vapor phase or an aromatic hydrocarbon in vapor phase.

11. (New) The process according to claim 6, wherein the hydrocarbon isomers have